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PALE WESTERN CUTWORM CONTROL

By

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FIELDS LIKELY TO BE INFESTED IN OUTBREAK AREAS

1. Fields cropped the previous year and harvested, worked or pastured during the moth-flight period (August 15 to September 15).

2. Summer-fallow fields disturbed during the moth flight or which later received drift soil from infested fields.

3. Fields sown or pastured during the moth flight.

FIELDS UNLIKELY TO BE INFESTED IN OUTBREAK AREAS

1. Summer-fallow fields that were undisturbed during the moth flight and which did not receive any drift soil from infested fields.

2. Other fields that were not disturbed during the above period.

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The pale western cutworm[3] has been increasing in numbers throughout many areas of Alberta and Saskatchewan. The reduction in numbers, following the outbreak years of 1931 to 1938, was due to excellent spring moisture conditions which prevailed up to 1944. Considerable damage is expected again and farmers are urged to take the necessary precautions to prevent infestation and to use cultural practices for "starvation" control during the early part of the growing season.

LIFE-HISTORY

The pale western cutworm is the larval stage of a moth, or "miller", which usually flies from about the first week in August to September 15. During this time the moths lay their eggs in loose, dusty soil. The eggs normally remain unhatched in the ground until spring and hatching takes place soon after the frost leaves the ground. The newly hatched larvae are very small, about one-eighth of an inch in length, and almost colourless. They can live in the soil for several weeks without food and feeding commences when vegetation starts to show above the soil surface. Cutworms feed mostly above the ground in their early stages and below the ground when about one-quarter of an inch long. They feed throughout

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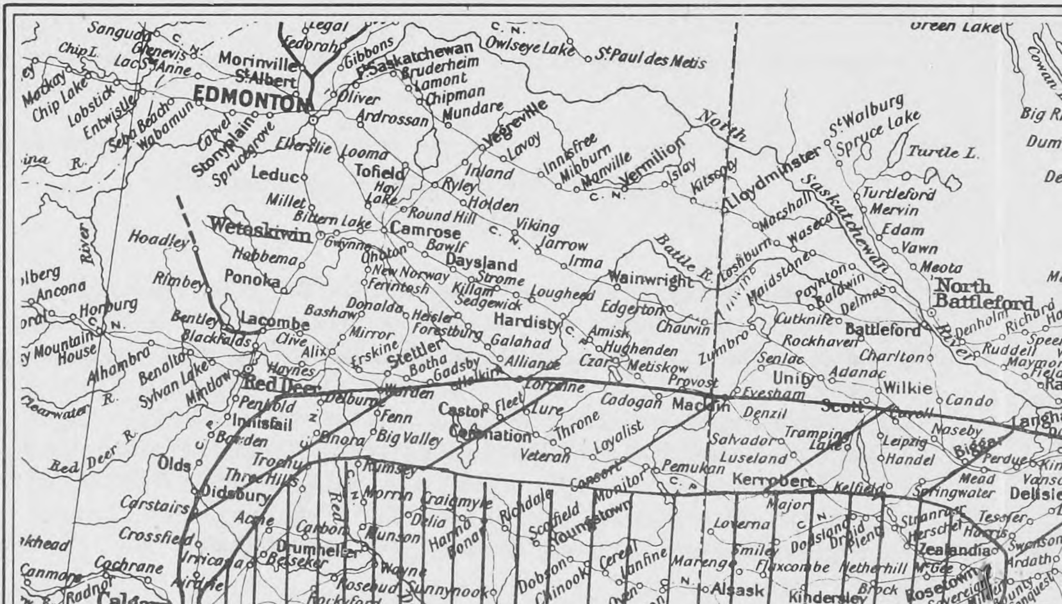
3 Agrotis orthogonia Morr.

PALE WESTERN CUTWORM F



	Area of probable severe infestation
	Area of probable light and patchy i

The most severe infestations in 1947 are expected to occur in or ad

RM FORECAST FOR 1947

festation unless 1947 is very wet.

patchy infestation unless 1947 is very dry.

in or adjacent to areas where severe damage occurred in 1946.

May and the first half of June and, when full-grown, are about $1\frac{1}{2}$ inches long. They then form small cells in the ground and enter a resting stage, when no further feeding takes place, changing finally to dark brown pupae, from which the moths later emerge. The moths begin to fly about in search of food and soil suitable for egg-laying about the first week in August.

CONTROL MEASURES

1. Do not work land between August 1 and September 15.

Cutworm infestations can be prevented largely by making certain that fields are unsuitable for egg-laying. Moths lay eggs only in loose, dusty soil and do not lay in fields in which the surface soil is even slightly crusted. Any land that is being summer-fallowed should be worked to destroy all weed growth by the end of July; then the field should be left undisturbed by cultivation or livestock throughout the egg-laying period of August and early September so that any crust which might be formed by light showers will remain unbroken.

Fall-sown wheat or rye is not immune from cutworm attack. These crops should be sown before August 1 or after September 15.

2. Starve young cutworms in the spring.

Newly hatched pale western cutworms can be destroyed by starvation in the open field if, after they have started to feed and develop, their food supply is destroyed for a time by cultivation. This fact can be utilized in the control of this pest in infested fields.

To rid an infested field of cutworms by starvation the spring cultivation should be delayed until weeds and volunteer grain are from 1 to 2 inches above the ground. At this time the whole field should be thoroughly cultivated and all growth destroyed. Seeding should take place only after a delay of 10 days from the time cultivation is completed.

3. Do not seed grain on stubble.

In districts where the forecast indicates that cutworms will be present, stubble fields are almost sure to be infested because the soil surface has been disturbed by harvesting operations during the moth flight in the previous August and September.

SPECIAL PRECAUTIONS

In the area where the cutworm hazard is greatest, as shown in the forecast map issued by the Division of Entomology, special precautions will pay dividends.

Stubble fields almost certainly will be infested, and therefore grain should not be planted on stubble without using starvation control.

If fall wheat and fall rye are examined as soon as growth starts in the spring and half of the plants show signs of cutworm feeding on the leaves, the crop probably is doomed. It should be cultivated out and the field re-seeded in 10 days to a spring crop.

If there is any doubt about the crust on summer-fallowed fields during the moth flight, or if soil drifting has occurred, fields should be examined early in the spring for cutworm infestation. Evidence of feeding on weeds and volunteer grain can be determined in the same way in summer-fallow fields. If leaves show notching or small holes from cutworm feeding, growth should be left until it is about 2 inches high, then cultivated out and seeding delayed for 10 days.

If the pale western cutworm is a problem in any area in the spring, a special effort should be made to complete summer-fallow operations by August 1 and to keep off these fields until after September 15. If a crust is allowed to form, infestations the next year will be prevented. Even normal settling in most soils will reduce infestation.

For more detailed information write or call at the Dominion Entomological Laboratory, Lethbridge, Alberta, or Saskatoon, Saskatchewan, or write to the Dominion Entomologist, Dominion Department of Agriculture, Ottawa, Canada.